



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,023	03/26/2004	Zhaofu Hu		8416

25859 7590 12/28/2006
WEI TE CHUNG
FOXCONN INTERNATIONAL, INC.
1650 MEMOREX DRIVE
SANTA CLARA, CA 95050

EXAMINER

CANNING, ANTHONY J

ART UNIT	PAPER NUMBER
----------	--------------

2879

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/810,023	Applicant(s) HU ET AL.	
	Examiner Anthony J. Canning	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 18, 20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 18, 20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement of After-Final Remarks

1. The remarks made to the final rejection of the instant application were entered on 7 November 2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones et al. (U.S. 5,548,181).
4. Regarding claims 1, 18 and 20, Jones et al. disclose a barrier array (see Fig. 74, item 115; column 13, lines 31-26) for use in a flat panel display (see Fig. 106b; column 21, lines 11-13) including: a shadow mask (see Fig. 74, item 122; column 13, lines 21-26) defining a plurality of openings (see Fig. 74, item 118; column 13, lines 15-16; this pixel opening is for an individual field emitter but there are pixel openings for each field emitter shown in figure 106b) therethrough according to a predetermined pattern (see Fig. 74, item 118; column 13, lines 15-16; this pixel opening is for an individual field emitter but there are pixel openings for each field emitter shown in figure 106b), the predetermined pattern being in accordance with a pixel pattern of a flat panel display (see Fig. 74; column 13; lines 10-20; the pixel cavity is the opening

Art Unit: 2879

corresponding to the pixel pattern), the shadow mask having an upper (see Fig. 74, item 122; column 13, lines 21-26; the portion of 122 closest to the top of the page) and lower surface (see Fig. 74, item 122; column 13, lines 21-26; the portion of 122 closest to the bottom of the page) and an insulative layer (see Fig. 74, item 121; column 13, lines 21-23) including a first portion layer formed on the upper surface of the shadow mask (see Fig. 74, item 121; column 13, lines 21-23; the portion of item 121 closest to the top of the page), a plurality of second portions (see Fig. 74, item 121; column 13, lines 21-23; the portion of 121 that has a slope and descends through the pixel cavity 118), and a third portion formed on the lower surface of the shadow mask (see Fig. 74, item 121; column 13, lines 21-23; the portion of item 121 closest to the bottom of the page), the second portions disposed in the respective openings and connecting the first portion with the third portion (see Fig. 74, item 121; the portion that descends through the pixel opening connects the portion of item 121 closest to the top of the page and the portion of item 121 that is closest to the bottom of the page).

5. Regarding claim 3, Jones et al. disclose the barrier array as described in claim 1. Jones et al. further disclose the insulative layer comprises alumina or magnesia (column 13, lines 21-23; specifically magnesia).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 5 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (U.S. 5,548,181).

8. As to claims 4, 5 and 22, Jones et al. disclose the barrier array as described in claims 3 and 18. Jones et al. fail to disclose that the thickness of the insulative layer being between 10-500 μm . However, to establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 197 (CCPA 1960). An affidavit or declaration under 27 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a *prima facie* case of obviousness. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979). "A comparison of the *claimed* invention with the disclosure of each cited reference to determine the number of claim limitations in common with each reference, bearing in mind the relative importance of particular limitations, will usually yield the closest single prior art reference." *In re Merchant*, 575 F.2d 865, 868, 197 USPQ 785, 787 (CCPA 1978) (emphasis in original). Where the comparison is not identical with the reference disclosure, deviations therefrom should be explained, *In re Finley*, 174 F.2d 130, 81 USPQ 383 (CCPA 1949), and if not explained should be noted and evaluated, and if significant, explanation should be required. *In re Armstrong*, 280 F.2d 132, 126 USPQ 281 (CCPA 1960) (deviations from the example were inconsequential).

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (U.S. 5,548,181) in view of Lee et al. (U.S. 6,508,685 B1; of record).

Art Unit: 2879

10. As to claim 2, Jones et al. disclose the barrier array as described in claim 1. Jones et al. fail to specifically disclose the shadow mask is made from a material selected from the group including: an iron-nickel alloy, low carbon steel, and another suitable metal alloy; and the material has a coefficient of thermal expansion matching that of a substrate of the flat panel display.

In the same field of endeavor, Lee et al. disclose a barrier array (see Fig. 6, item 52; column 5, lines 37-40), wherein the shadow mask (see Fig. 7, item 52; column 5, lines 37-40) is made from a material selected from the group including: an iron-nickel alloy, low carbon steel, and another suitable metal alloy (column 5, lines 37-40; these are metal alloys, and any metal may be chosen); and the material has a coefficient of thermal expansion matching that of a substrate of the flat panel display (column 5, lines 37-40; these are metal alloys, and any metal may be chosen which can match the thermal expansion of the substrate of the display device). Lee et al. further disclose that these materials increase the reflectivity of visible light (column 5, lines 40-41), choosing a material that matches the thermal expansion coefficient of the substrate will reduce damage to the device due to the operation temperature of the device.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the barrier array of Jones et al. to include that the shadow mask is made from a material selected from the group including: an iron-nickel alloy, low carbon steel, and another suitable metal alloy; and the material has a coefficient of thermal expansion matching that of a substrate of the flat panel display, as taught by Lee et al., to increase the reflectivity of visible light and to reduce damage to the device caused by the operation temperature of the device.

Response to Arguments

11. Applicant's arguments, see Remarks, filed 7 November 2006, with respect to the rejection(s) of claim(s) 1-5, 18, 20 and 22 under Jones et al. (U.S. 5,534,743) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Jones et al. (U.S. 5,548,181).

Final Rejection

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

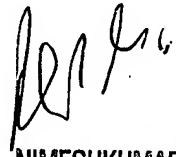
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

Art Unit: 2879

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning *de*
Patent Examiner
Art Unit 2879
20 December 2006


NIMESHKUMAR D. PATEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800